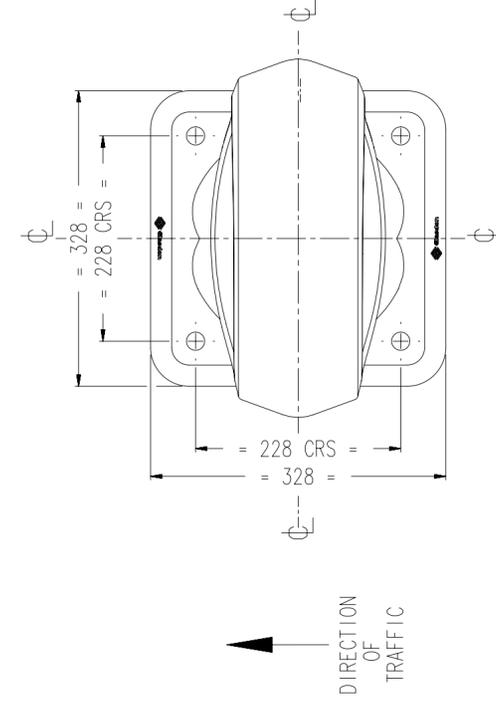


MODEL SPECIFICATION REBOUND SIGNMASTER™ BOLLARD

(BOLLARD c/w SURFACE MOUNT FIXINGS / ADJUSTABLE OR FIXED DEPTH CONCRETE-IN GROUND ANCHORS)



PRODUCT INFORMATION:

- WEIGHT - BOLLARD - 6.0 Kg
FIXINGS - 0.6 Kg (OPT 1: SURFACE MOUNT FIXINGS) OR 1.3 Kg (OPT 2: ADJ DEPTH ANCHOR BAR) OR 1.1 Kg (OPT 3: FIXED DEPTH ANCHOR BAR)
TOTAL - 6.6 Kg / 7.3 Kg / 7.1 Kg
- MATERIAL - BOLLARD: - IMPACTAPOI®
FIXINGS: - SCREWS & WASHERS - STAINLESS STEEL
- SPACERS - RIGID PVC
- OPT 1: SURFACE MOUNT FIXINGS - MS BZP
- OPT 2: ADJ DEPTH ANCHOR BAR - MS BZP
- OPT 3: FIXED DEPTH ANCHOR BAR - MS BZP
- BODY COLOURS - BLACK / WHITE / AIRCRAFT GREY
- DIMENSIONS - ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED.

INSTALLATION GUIDE:

- ITEM 1 - REMOVABLE BOLLARD
- ITEM 2 - FIXINGS FOR BOLLARD:
 - M10 SCREW COVER CAP & RETAINER WASHER - WHITE NY66 - x4
 - M10 x 100mm SOCKET HEAD SCREW - S/S - x4
 - M10 x Ø50 x 3mm WASHER - POWDER COATED S/S - x4
 - M10 x Ø19 x 28mm SPACER - RIGID PVC - x4
- ITEM 3 - GROUND FIXING OPTION 1: SURFACE MOUNT FIXINGS - x4:
- ITEM 4 - GROUND FIXING OPTION 2: ADJ DEPTH ANCHOR BAR - x4
- ITEM 5 - GROUND FIXING OPTION 3: FIXED DEPTH ANCHOR BAR - x2
- ITEM 6 - SOLID CONCRETE FOUNDATION OR QUICK SETTING CONCRETE (eg. GRADE QC10)
- ITEM 7 - SUPPORT BLOCK: CAN BE ANYTHING SOLID TO ENSURE BOLLARD IS SUPPORTED AT THE CORRECT HEIGHT UNTIL THE CONCRETE HAS SET.
- ENSURE THAT ANY SIGNFACE FACES TOWARDS ONCOMING TRAFFIC.
- FOR OPTION 1: SURFACE MOUNT FIXING:
 - 4 HOLES TO BE DRILLED FOR SURFACE MOUNT FIXINGS AND SCREWS Ø16mm x 75mm (MIN DEPTH). ENSURE THE HOLES ARE LOCATED AT LEAST 100mm FROM ANY EDGE OF THE CONCRETE FOUNDATION.

WE RECOMMEND INSTALLING THE BOLLARD ON AN EXISTING SOUND CONCRETE FOUNDATION, OR FOR SPEED, PREPARING THE SITE WITH QUICK SETTING CONCRETE (eg. GRADE QC10). BUT EXACT INSTALLATION REQUIREMENTS SHOULD BE ASSESSED FROM A SITE SURVEY.

AVOID CONTACT WITH HOT TARMACADAM AS THIS WILL SERIOUSLY IMPAIR THE PERFORMANCE OF THE BOLLARD.

- FOR OPTION 2 & 3: ADJ & FIXED DEPTH ANCHOR BARS (CONCRETE-IN):
FIX THE BARS TO THE BOLLARD BEFORE INSTALLATION, AS THIS WILL ENSURE FIXING CENTRES ARE CORRECT AND PREVENT THE NEED TO REVISIT THE SITE ONCE CONCRETE HAS SET.

RECOMMENDED MINIMUM HOLE SIZE: 430x430x355mm DEEP (FOR ADJ DEPTH) 500x500x250mm DEEP (FOR FIXED DEPTH)

IF DEPTH IS RESTRICTED TO LESS THAN 400mm WHEN USING OPTION 2, THEN THE 'ADJ DEPTH ANCHOR FIXING BARS' CAN BE CUT DOWN IF REQUIRED. HOWEVER WE RECOMMEND USING THE SAME VOLUME OF CONCRETE BY INCREASING THE WIDTH OF THE HOLE TO COMPENSATE.

- FOR SPEED WE RECOMMEND INSTALLING WITH QUICK SETTING CONCRETE (eg. GRADE QC10) BUT EXACT INSTALLATION REQUIREMENTS SHOULD BE ASSESSED FROM A SITE SURVEY.

OPTIONAL PARTS:

- OPTIONS AVAILABLE FOR THE PRODUCT:

- BODY C/W FRONT, 1xLH & 1xRH CONSPIQUITY PANELS
- BODY C/W FRONT, 2xLH & 2xRH CONSPIQUITY PANELS
- BODY C/W FRONT, REAR, 2xLH & 2xRH CONSPIQUITY PANELS
- + A RANGE OF AUTHORISED SIGNFACES &/OR WHITE DISC

- SPARES ARE AVAILABLE, WHICH INCLUDE:

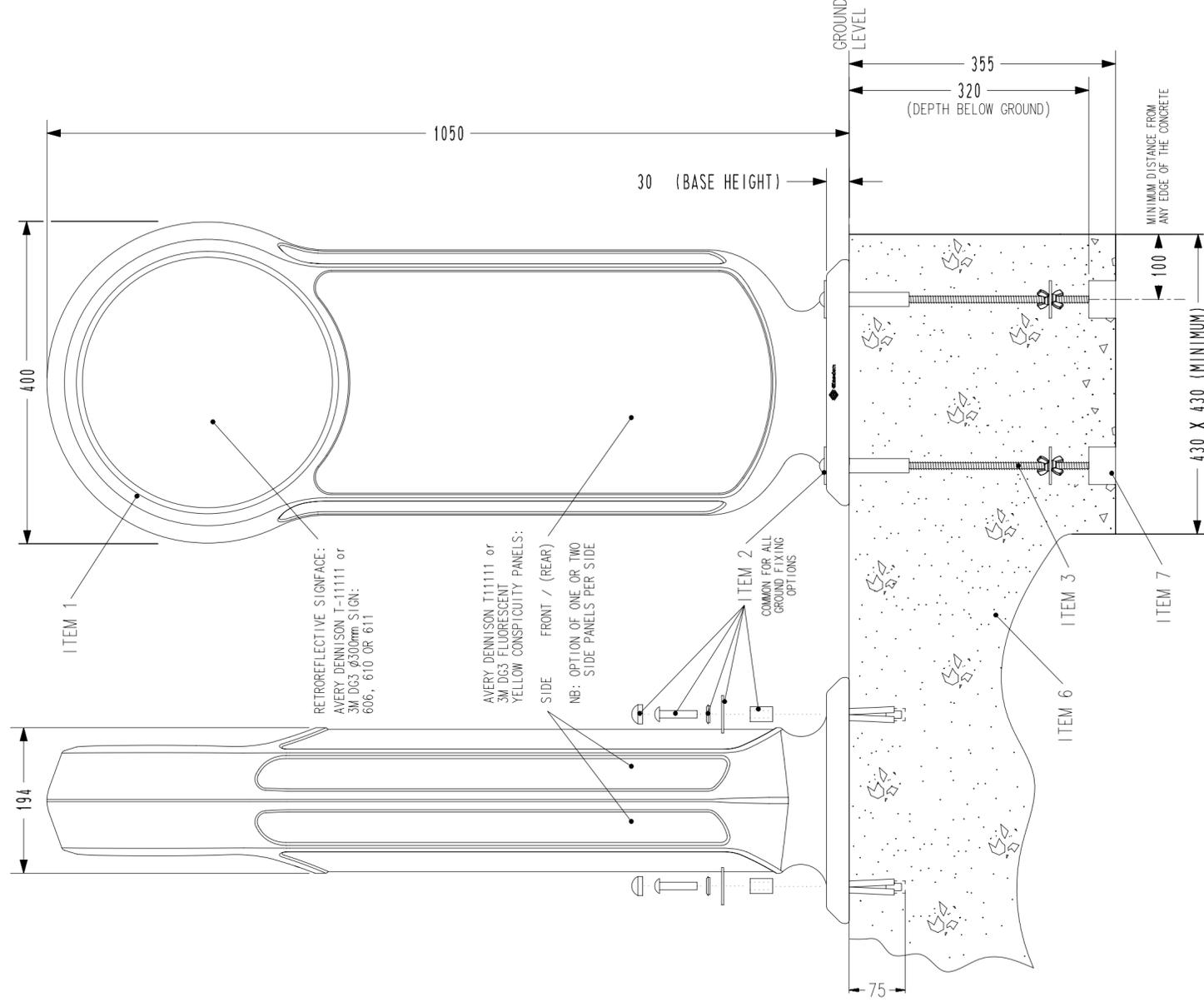
- BOLLARD C/W FIXINGS & RETROREFLECTIVE PATCHES
- BOLLARD ONLY
- RANGE OF SIGNFACES
- FIXINGS

TECHNICAL DATA:

- SURFACE AREA OF CONSPIQUITY PANELS:
 - FRONT = 161,70mm² (PROJECTED)
 - SINGLE SIDE = 24,255mm²
 - OPTIONAL DOUBLE SIDE = 48,510mm²
- SURFACE AREA OF SIGNFACE = 70,686mm²

- ALL RETROREFLECTIVE MATERIALS SUPPLIED BY GLASDON UK ARE AS RECOMMENDED IN TABLE NA1 OF THE NATIONAL ANNEX OF BS EN 12899-1 2007 FIXED VERTICAL ROAD SIGNS. MICROPRISMATIC RETROREFLECTIVE MATERIALS USED ON OUR PRODUCTS MEET THE REQUIREMENTS OF BS 8408 2005 ROAD TRAFFIC SIGNS. TESTING AND PERFORMANCE OF MICROPRISMATIC RETROREFLECTIVE SHEETING MATERIALS WHEN SITED NORMALLY AND USED IN THEIR NORMAL APPLICATION.

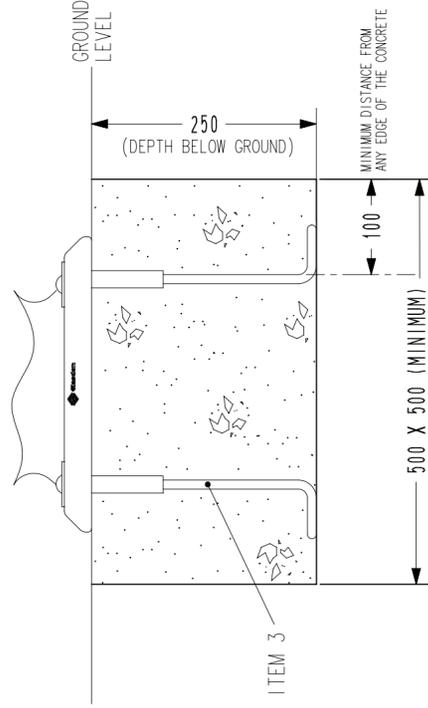
PLAN VIEW



SIDE VIEW

SHOWING - ABOVE: SURFACE MOUNT FIXINGS

SHOWING - ABOVE: OPT 2: ADJUSTABLE DEPTH ANCHOR BAR FIXINGS
- BELOW: OPT 3: FIXED DEPTH ANCHOR BAR FIXINGS



RETROREFLECTIVE SELF RIGHTING BOLLARD

| | |
|------------|-------------|
| DRG. TITLE | |
| PROJECT | |
| DRG. No. | PROJECT No. |
| SCALE | DATE |
| DRAWN BY | CHECKED |



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SPECIFICATION NUMBER - 025066-S03 | ISSUE 09

©GLASDON GROUP LTD 06/04/05 | SIZE: A2

Rebound Signmaster™ Bollard

INSTALLATION INSTRUCTIONS

Adjustable Depth Concrete-in Fixing System

IMPORTANT NOTE: ENSURE ALL RELEVANT PERSONNEL READ THE POINTS LISTED BELOW AND THAT A COPY IS PASSED ON TO STAFF INVOLVED WITH THE INSTALLATION.

SAFETY NOTE: Please refer to the 'Manual handling Operations Regulations 1992' During the handling of the product and materials used for the installation.

PRODUCT COMPONENTS:

| | |
|---------------------------------------|-----|
| ITEM 1. Bollard | x 1 |
| ITEM 2. Adjustable Concrete-in Fixing | x 4 |
| ITEM 3. Spacer (M10 x 28 mm) | x 4 |
| ITEM 4. Washer (M10 x 50 mm) | x 8 |
| ITEM 5. Fixing Screw (M10 x 100) | x 4 |

TOOLS REQUIRED FOR INSTALLATION:

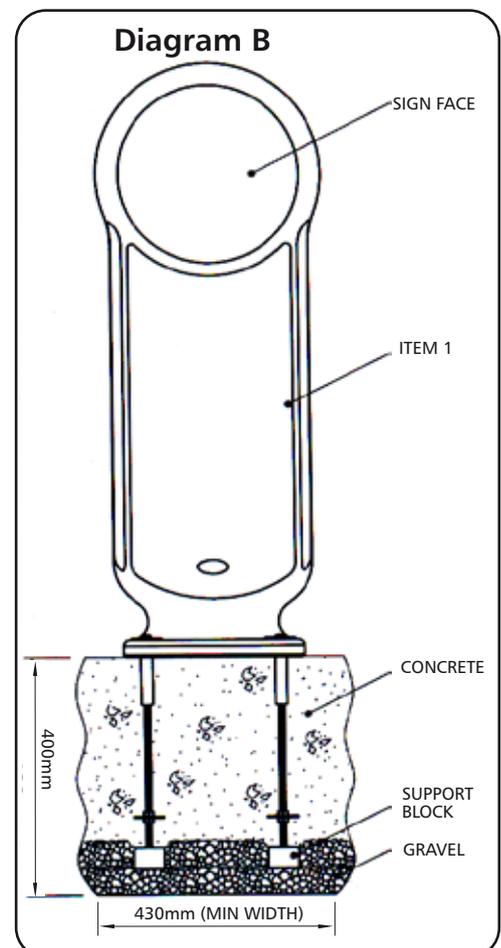
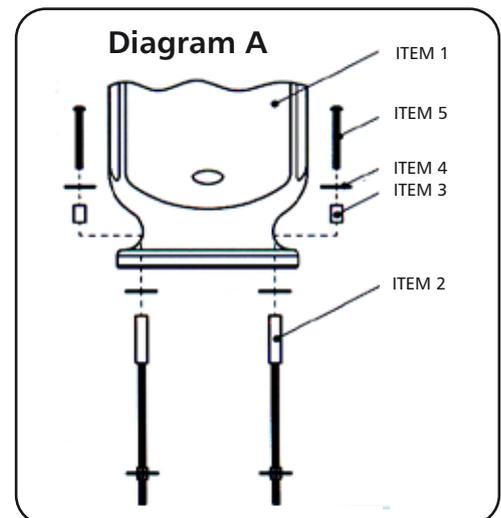
- 6 mm allen key (included within kit)
- Equipment to excavate hole
- Concrete Mix (Fast Setting)
- Spirit Level

INSTALLATION:

- 1) **Check for buried services before starting installation.**
- 2) Prepare a hole 430mm x 430mm x 400mm deep.
- 3) Fully assemble and tighten all four Concrete-in Fixings (item 2) to the base of the bollard (item 1) as shown in the diagram A.
- 4) If the depth is restricted to less than 400mm the fixing can be adjusted by moving the bottom washer of item 2 up the Concrete-in Fixings and cutting the bar to the desired length. We would recommend using the same volume of concrete by increasing the width of the hole accordingly.
- 5) Place aggregate and support blocks in the base of the prepared hole.
- 6) Place the Concrete-in Fixing Assembly into the hole ensuring that the fixings rest on the support blocks and that the bollard is vertically level.
- 7) Remove the bollard and fixing assembly and pour the concrete mix into the prepared hole to the desired level.
- 8) Ensure the bollard is orientated correctly with regard to the site requirements. (i.e. Retro-Reflective Sign Faces and Amber Patches).
- 9) Fully insert the Concrete-in Fixing Assembly into the concrete until the base of the bollard is flush with the top surface of the concrete (see diagram B).
- 10) If required the top of the bollard foot detail can be sunk flush with the concrete/block paving to give a neat finish. DO NOT concrete over the fixing screw heads as this will impair the performance of the Rebound models and will prevent the bollard being replaced.
- 11) Ensure the bollard remains vertically level during the concrete setting period.

REPLACING YOUR BOLLARD

- 1) Remove the four Fixing Screws with the 6mm Allen Key provided (discard the Fixing Screws).
- 2) Remove the existing bollard and replace with your new bollard in the correct orientation aligning the holes in the bollard base with the existing Anchor Rawl Plugs.
- 3) Insert Spacer (item 3) into the four holes in the base of the bollard.
- 4) Position a Washer (item 4) onto the Fixing Screw (item 5) and insert one into each of the four holes.
- 5) Using the 6mm Allen Key provided, loosely tighten each of the Fixing Screws, and then fully tighten to complete the installation.



Rebound Signmaster™ Bollard

INSTALLATION INSTRUCTIONS

Surface Mounting onto an Existing Concrete Foundation

IMPORTANT NOTE: ENSURE ALL RELEVANT PERSONNEL READ THE POINTS LISTED BELOW AND THAT A COPY IS PASSED ON TO STAFF INVOLVED WITH THE INSTALLATION.

SAFETY NOTE: Please refer to the 'Manual handling Operations Regulations 1992' During the handling of the product and materials used for the installation.

PRODUCT COMPONENTS:

| | |
|----------------------------------|-----|
| ITEM 1. Bollard | x 1 |
| ITEM 2. Anchor Rawl Plug | x 4 |
| ITEM 3. Spacer (M10 x 28 mm) | x 4 |
| ITEM 4. Washer (M10 x 50 mm) | x 8 |
| ITEM 5. Fixing Screw (M10 x 100) | x 4 |

TOOLS REQUIRED FOR INSTALLATION:

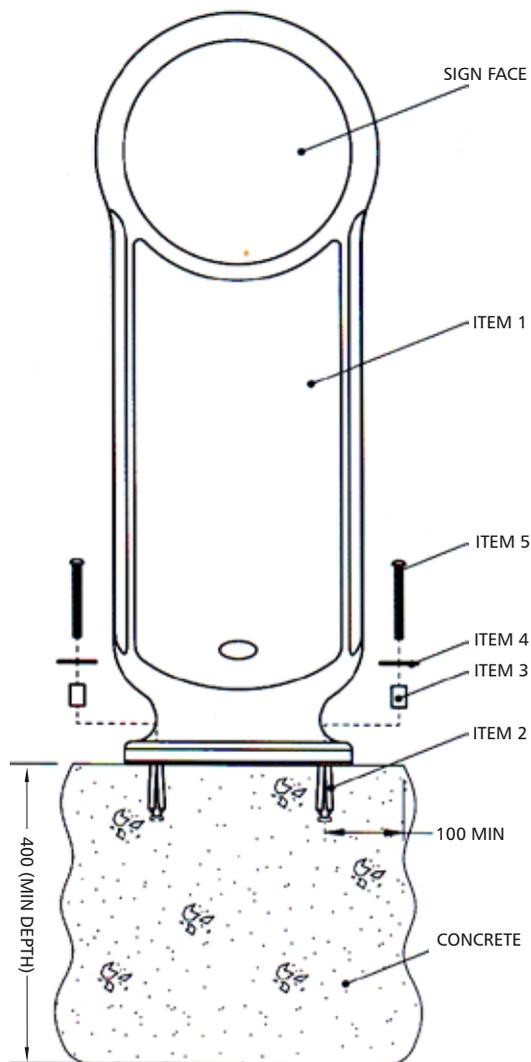
- 6 mm allen key (included within kit)
- 16mm Diameter Drill Bit
- Appropriate Electric Drill
- Hammer

INSTALLATION:

- 1) Position the bollard (item 1) centrally on the intended site and orientate it correctly with regard to the site requirements. (i.e. Retro-Reflective Sign Faces and Amber Patches).
- 2) Using the bollard, mark out the four hole positions.
- 3) Before drilling ensure that the hole centres are a minimum of 100mm from the edge of the concrete foundation.
- 4) Drill the four holes with a 16mm diameter drill bit no less than 80mm deep (ensure holes are in the correct position by aligning the bollard and drilled hole centres).
- 5) Insert an Anchor Rawl Plug (item 2) into each of the four drilled holes, a hammer may be required to tap them flush to ground level.
- 6) Locate the bollard in position aligning the holes in the bollard with the Anchor Rawl Plugs ensuring the bollard is orientated correctly.
- 7) Insert Spacer (item 3) into the four holes in the base of the bollard.
- 8) Position a Washer (item 4) onto the Fixing Screw (item 5) and insert one into each of the four holes.
- 9) Using the 6mm Allen Key provided, loosely tighten each of the Fixing Screws, and then fully tighten to complete the installation.

REPLACING YOUR BOLLARD

- 1) Remove the four Fixing Screws with the 6mm Allen Key provided (discard the Fixing Screws).
- 2) Remove the existing bollard and replace with your new bollard in the correct orientation aligning the holes in the bollard base with the existing Anchor Rawl Plugs.
- 3) Continue the installation from note 7 above.

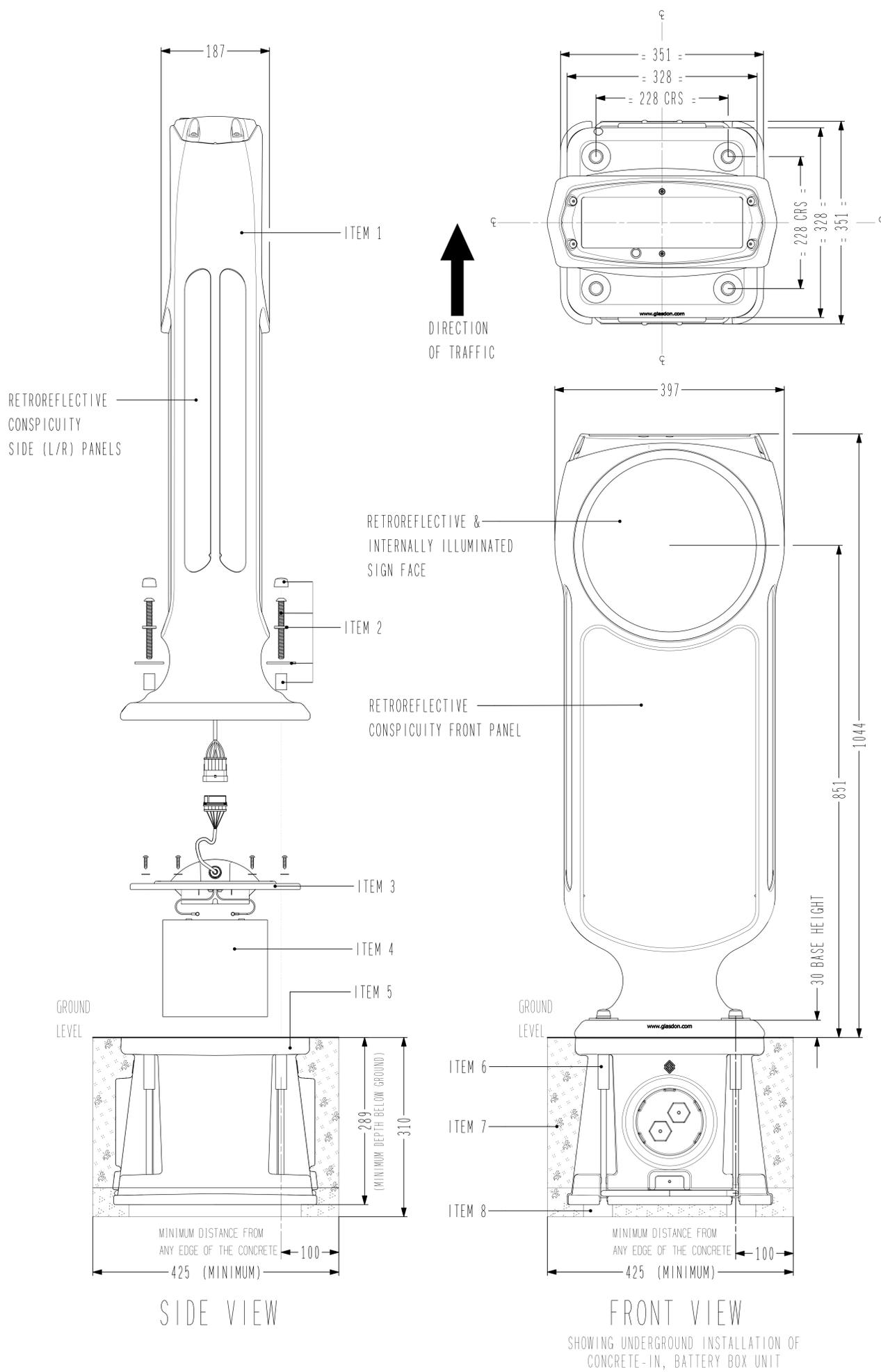


 **Glasdon®** AND REBOUND SIGNMASTER™ BOLLARD ARE TRADEMARKS OR REGISTERED TRADEMARKS OF GLASDON GROUP OR ITS SUBSIDIARIES IN THE U.K. AND OTHER COUNTRIES

- A planned maintenance schedule of regular inspection is recommended, replacing components as necessary.
- Replacement components are available direct from GLASDON.
- GLASDON cannot be held responsible for claims arising from incorrect installation, unauthorised modifications or misuse of the product.

MODEL SPECIFICATION

REBOUND SOLAR SIGMASTER™ (WITH CONCRETE-IN IP67 RATED BATTERY BOX)



- **WEIGHT**
 - BOLLARD c/w SOLAR PANEL & LED - 7.4 Kg
 - BATTERY BOX - 3.0 Kg
 - BATTERY LID c/w PCB & CABLES - 0.5 Kg
 - BATTERIES x 2 - 13.6 Kg
 - FIXINGS - 1.0 Kg
 - TOTAL - 25.5 Kg
 - **MATERIAL**
 - BOLLARD: - IMPACTAPOC®
 - BATTERY BOX: - DURAPOC®
 - FIXINGS: - SCREWS & WASHERS - STAINLESS STEEL
 - SPACERS - RIGID PVC
 - CONCRETE-IN ANCHOR FIXING BARS - MS BZP
 - **BOLLARD COLOUR** - BLACK
 - **DIMENSIONS** - ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED
 - **ITEM 1** - REMOVABLE BOLLARD c/w L.E.D., LDR, SOLAR PANEL AND COVER LENS, SEALED CONSPICUITY SIGN FACE & WATERPROOF CONNECTOR (FEMALE) - x1
 - **ITEM 2** - FIXINGS FOR BOLLARD:
 - M10 SCREW COVER CAP & RETAINER WASHER - x4
 - M10 x 30mm SOCKET HEAD SCREW - S/S - x4
 - M10 x Ø50 x 3mm WASHER - POWDER COATED S/S - x4
 - M10 x Ø19 x 28mm SPACER - RIGID PVC - x4
 - **ITEM 3** - BATTERY BOX LID c/w DRIVER PCB, SILICONE SEAL, BATTERY CONNECTOR & WATERPROOF CONNECTOR (MALE)
 - **ITEM 4** - 12v 20AH / 20HR BATTERIES (2 OFF)
 - **ITEM 5** - CONCRETE-IN BATTERY BOX (MAIN UNIT)
 - **ITEM 6** - CONCRETE-IN ANCHOR FIXING BAR (2 OFF)
 - **ITEM 7** - QUICK SETTING CONCRETE (eg. GRADE QC10)
 - **ITEM 8** - SUPPORT BLOCKS (TO ENSURE ASSEMBLY IS LEVEL)
- ORIENTATE SIGNFACE TOWARDS ONCOMING TRAFFIC.
- RECOMMENDED MINIMUM HOLE SIZE: 425x425x310mm DEEP.
- FOR SPEED WE RECOMMEND INSTALLING WITH QUICK SETTING CONCRETE (eg. GRADE QC10) BUT EXACT INSTALLATION REQUIREMENTS SHOULD BE ASSESSED FROM A SITE SURVEY.
- AVOID CONTACT WITH HOT TARMACADAM AS THIS WILL SERIOUSLY IMPAIR THE PERFORMANCE OF THE BOLLARD.

OPTIONAL PARTS:

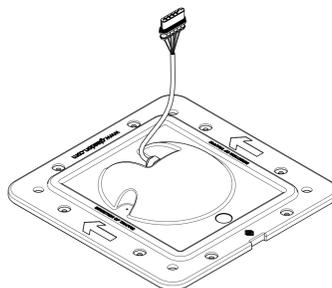
- **OPTIONS AVAILABLE FOR THE PRODUCT:**
 - BODY C/W FRONT, 1xLH & 1xRH CONSPICUITY PANELS
 - BODY C/W FRONT, 2xLH & 2xRH CONSPICUITY PANELS
 - BODY C/W FRONT, REAR, 2xLH & 2xRH CONSPICUITY PANELS
 - + A RANGE OF AUTHORISED SIGNFACES &/OR WHITE DISC
- **SPARES ARE AVAILABLE, WHICH INCLUDE:**
 - KIT 1 - BOLLARD c/w FIXINGS, RETROREFLECTIVE PATCHES, SOLAR PANEL & COVER LENS
 - RANGE OF SIGNFACES
 - FIXINGS
 - KIT 2 - BATTERY BOX LID c/w SILICONE SEAL, DRIVE PCB, POWER CABLE, SCREW FIXINGS, CABLE GLAND, WATERPROOF MALE CONNECTOR & BATTERY CONNECTOR
 - KIT 3 - 12v 20Ah x 2 c/w FOAM BLOCK - BATTERY KIT

TECHNICAL DATA:

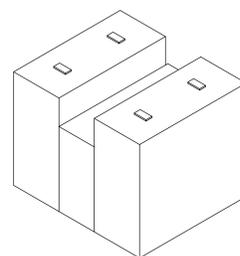
- IP67 RATED BATTERY BOX - EN60529:1992/A2:2013
- IP56 RATED SOLAR SIGMASTER c/w SOLAR PANEL & SIGNFACE - EN60529:1992/A2:2013
- **SURFACE AREA OF CONSPICUITY PANELS:**
 - FRONT = 151,475mm² (PROJECTED)
 - SINGLE SIDE = 20,784mm²
 - OPTIONAL DOUBLE SIDE = 41,568mm²
- **SURFACE AREA OF SIGNFACE = 71,314mm²**
- ALL RETROREFLECTIVE MATERIALS SUPPLIED BY GLASDON ARE AS RECOMMENDED IN TABLE NA1 OF THE NATIONAL ANNEX OF BS EN 12899-1: 2007 FIXED VERTICAL ROAD SIGNS.
- MICROPRISMATIC RETROREFLECTIVE MATERIALS USED ON OUR PRODUCTS MEET THE REQUIREMENTS OF BS EN 12899-1: 2007 ROAD TRAFFIC SIGNS. TESTING AND PERFORMANCE OF MICROPRISMATIC RETROREFLECTIVE SHEETING MATERIALS WHEN SITED NORMALLY AND USED IN THEIR NORMAL APPLICATION.
- **BATTERY WARNING:** THIS PRODUCT HAS BEEN FOUND TO CONTAIN SVHC: LEAD MONOXIDE (LEAD OXIDE) RISK OF FIRE, EXPLOSION, OR BURNS. DO NOT DISASSEMBLE, HEAT ABOVE THE 60°C, OR INCINERATE.

ISOMETRIC VIEWS OF SPARE BATTERY BOX LID (KIT 2)
SPARE BATTERY PACK (KIT 3)

KIT 2



KIT 3



website: www.glasdon.com
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Facsimile: 01253 792558

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SPECIFICATION NUMBER - 025068-S01

ISSUE 01

GLASDON GROUP LTD 27/02/17

SHEET SIZE:A2



Solar Signmaster™

INSTALLATION INSTRUCTIONS

Ensure that all relevant personnel read the points listed within this leaflet and that a copy is given to staff involved with the installation and maintenance of this product. Glasdon recommends that a full Health and Safety analysis is carried out prior to installation.

KIT CONTENTS:

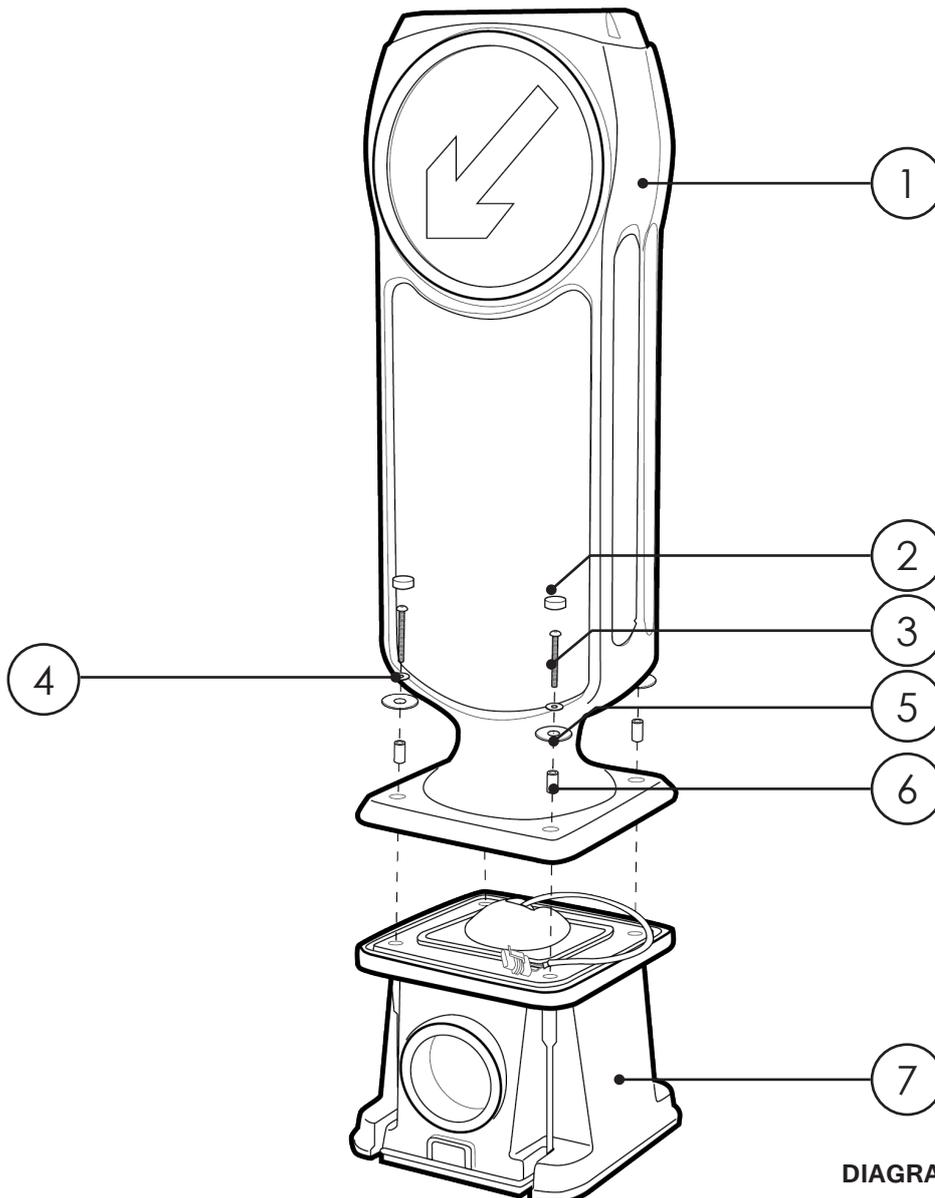
- ITEM 1 - Bollard x 1
- ITEM 2 - Cover Cap x 4
- ITEM 3 - Screw M10 x 100mm x 4
- ITEM 4 - Cover Cap Lock Washer x 4
- ITEM 5 - Washer M10 x 50mm x 4
- ITEM 6 - Spacer x 4
- ITEM 7 - Battery Chamber x 1

TOOLS INCLUDED:

- Allen Key 6mm x 1

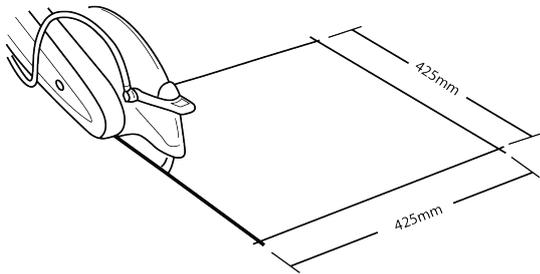
EQUIPMENT REQUIRED:

- Chalk [for marking out] x 1
- Portable Stone Saw x 1
- Jack Hammer or Digging Bar x 1
- Spade x 1
- Spirit Level x 1
- Trowel x 1
- Concrete Mix [Quick setting concrete - QC10]
- Safety Equipment [Hard hat, eye protection, ear defenders, hi-visibility clothing]



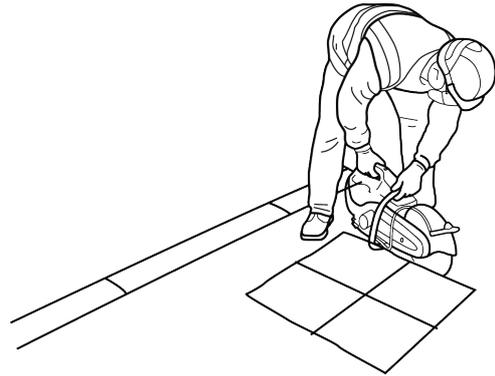
INSTALLATION INSTRUCTIONS

1.



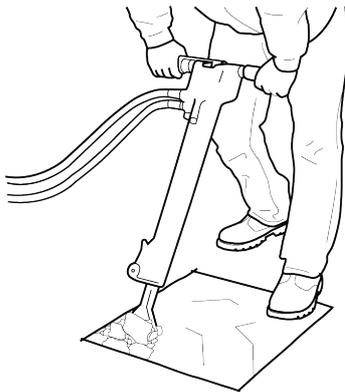
Mark out the hole for the Battery Chamber with chalk - 425 x 425mm minimum. Use the stone saw to trace the chalk outline [shallow to start] into the tarmac/concrete surface.

2.



Retrace the slots, cutting through using the full depth of the saw blade. It may be useful to split the square pad by cutting it into quarters to allow it to be broken up easily.

3.



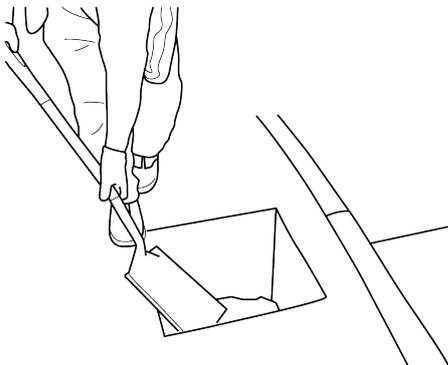
Use the jack hammer or digging bar to break up the top layers of material.

4.



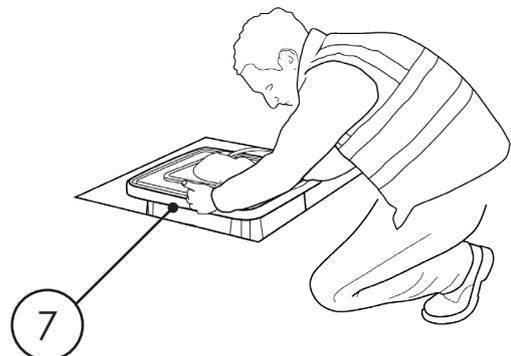
Use the spade to remove the broken up material.

5.



Continue digging until the hole reaches the required 310mm depth. Use the spade to square up the walls of the hole.

6.



Once the hole is deep enough, place the Battery Chamber (ITEM 7) into the hole. The edge of the Chamber should be as close to level with the surrounding ground surface as possible.

7.



Use a spirit level to ensure the Chamber is level within the hole. If necessary, pack material underneath the chamber to bring it level. Prepare the concrete mix.

8.



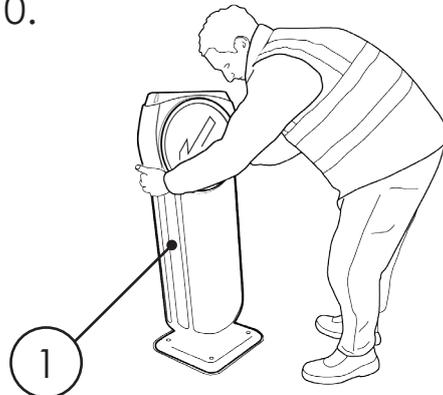
Start pouring concrete around the Chamber. Use a spade to shovel and a length of timber or a trowel to pack the concrete down the sides of the Chamber.

9.



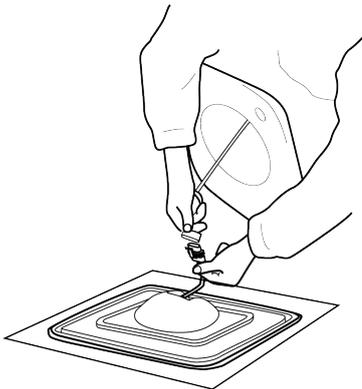
Use a trowel to carefully level and dress the concrete around the Chamber. NOTE: Place the four screws (ITEM 3's) into the fixing holes to prevent concrete entering the threads.

10.



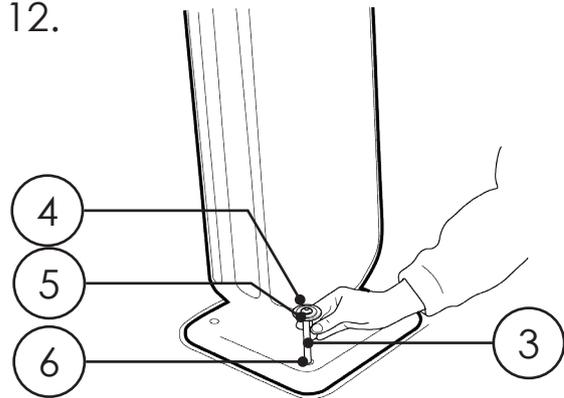
Place the Bollard (ITEM 1) on top of the Chamber. Remove the protective bag from the cable connection plug.

11.

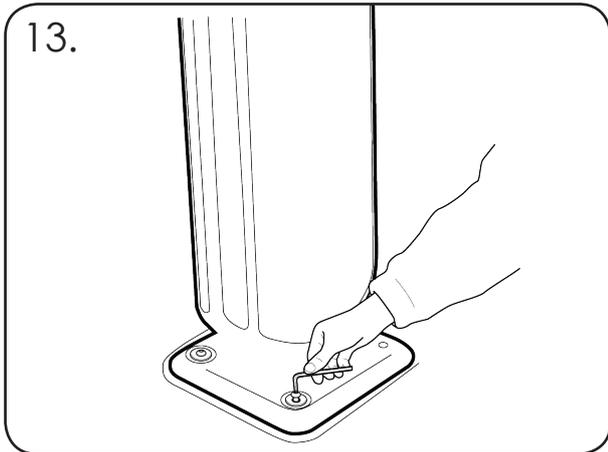


Remove the protective bag from the cable connection plug attached to the Chamber. Plug the connections for the Chamber and Bollard together. You should see the sign face flash 'on' briefly.

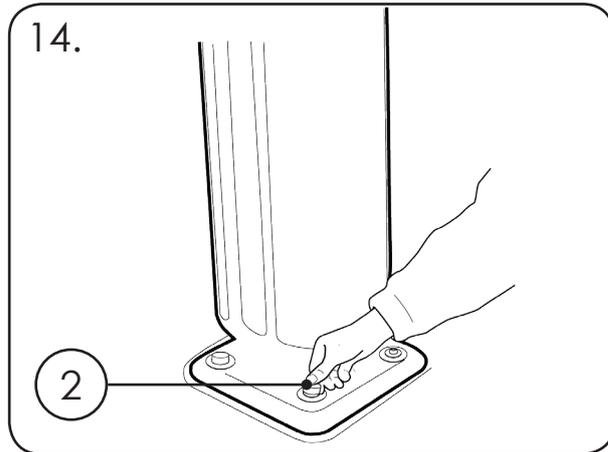
12.



Slot a cover cap lock washer (ITEM 4) followed by a 50mm washer (ITEM 5) onto one of the M10 screws (ITEM 3). Place one of the spacers (ITEM 6) into one of the ground fixing holes in the bollard foot. Place the assembled fixing through the bollard [through the spacer]. Repeat for the three remaining fixings.



Tighten each ground fixing a little by hand first to ensure they are all engaged with the thread in the fabricated fixing bars attached to the Chamber. Then use the Allen key provided to tighten the ground fixing screws.



Push the four cover caps (ITEM 2's) over the lock washers until they 'click' into place.



To test, cover the solar panel and Light Dependent Resistor [top of the bollard] for approximately 10 seconds. The sign face should illuminate.

INSTALLATION COMPLETE.

IMPORTANT NOTE: PLEASE ENSURE THAT ALL RELEVANT PERSONNEL READ THE POINTS LISTED WITHIN THIS LEAFLET AND THAT A COPY IS GIVEN TO STAFF INVOLVED WITH THE INSTALLATION AND MAINTENANCE OF THIS PRODUCT.

SAFETY NOTE: PLEASE REFER TO 'THE MANUAL HANDLING OPERATIONS REGULATIONS 1992' DURING HANDLING.

 **Glasdon** AND SOLAR SIGNMASTER ARE TRADEMARKS OR REGISTERED TRADEMARKS OF GLASDON GROUP OR ITS SUBSIDIARIES IN THE U.K. AND OTHER COUNTRIES

- A planned maintenance schedule or regular inspection is recommended, replacing components as necessary.
- Replacement components are available direct from GLASDON.
- GLASDON cannot be held responsible for claims arising from incorrect installation, unauthorised modifications or misuse of the product.

Stock No. C000/0494 - DWG No. 02B-068-42 Issue 1 - May 2017

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